Mirror, Mirror, Who is the sleepiest of them all?

Task One: How much sleep do students get?

The following question was asked about sleep on the CensusAtSchool Questionnaire:

How many hours of sleep do you usually get:
a. When you have school the next day
b. When you don't have school the next day?

1. Go to the CensusAtSchool website and use the Random Sampler to obtain a sample of 200 students.

Reference year *Select Year*
Select questions All

2. Copy the data from the CensusAtSchool questionnaire for the question concerning sleep onto a new, blank sheet and determine how much sleep students get today.

Task Two: Has anything changed since the 1830s?

The following extract was taken from the Report by the Committee on Factory Children's Labour (1831-32), quoted in Bland, Brown and Tawney, 1914: 511.

In 19th century England, children as young as 4 and most commonly 7 or 8 were employed up to 17 hours per day in the mines and factories which drove the industrial revolution.

Q: What time did you get them up in the morning?
A: In general, me or my mistress got them up at 2 o'clock [in the morning] to
dress them.

Q: So they had not above four hours sleep at this time?
A: No, they had not.

Q: Were the children excessively fatigued by this labour?
A: Many times; we have cried often when we have given them the little

victualling* we had to give them; we have had to shake them, and they have
fallen to sleep with the victuals in their mouths many a time.

Q: Did this excessive term of labour occasion much cruelty also?
A: Yes, with being so very much fatigued the strap was very frequently used.

*food

3. How does the amount of sleep children get today compare with the 1830s?

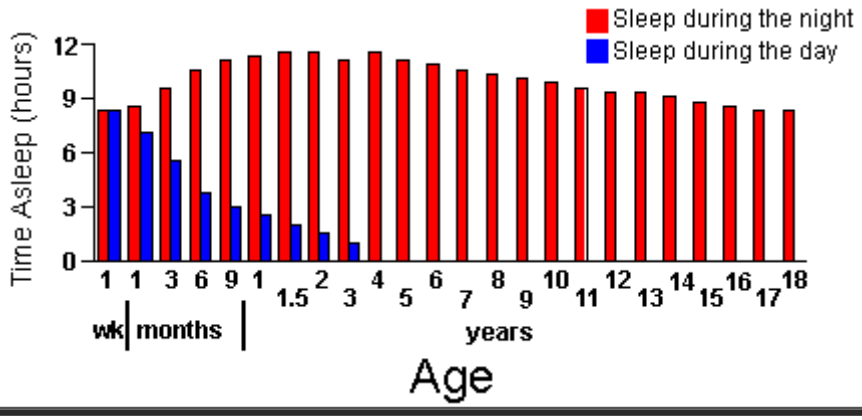
4. In what ways have things changed in the past 170 years?

4. What things are still the same or similar today?

Task Three: As we get older

A great deal of research has been carried out about sleep. In the sections that follow you will learn a little about some of the research findings and see if Australian CensusAtSchool data supports the research.

On the web page Neuroscience for kids - Sleep, http://faculty.washington.edu/chudler/sleep.html the following graph appears. It displays data taken from Howard, B.J. and Wong, J. Sleep disorders, Pediatrics in Review, 22:327-341, 2001.



6. What does this graph tell us about the time we spend sleeping as we get older?

7. Use your CensusAtSchool data to construct a graph that displays similar information to the one shown above.

8. Does the CensusAtSchool data tell the same story as the data shown in the graph above? Suggest reasons for this.

9. Does the CensusAtSchool data show seventeen year olds get more or less sleep than nine year olds? Suggest reasons for this.

Task Four: How much sleep is enough?

The US National Sleep Foundation report that adolescents should get between 8.5 and 9.5 hours of sleep per night. See the web page Teens and Sleep
http://www.sleepfoundation.org/article/sleep-topics/teens-and-sleep

(There are a number of interesting topics about sleeping at http://www.sleepfoundation.org look under the menu item "Sleep Topics a:Zzzzs")

Much debate in the US centres on the claim that students are starting school too early and as a result are getting too little sleep. The following claim is made on the web page of the Stanford University, The Sleep Well.
http://www.stanford.edu/~dement/adolescent.html

"Many High Schools have pushed the starting bell as early as 7:15 a.m. The average American teenager gets 6.5 hours of sleep on a school night, some lots less. There is evidence that many teens snooze through their morning classes."

10. How does the average Australian teenager compare to the average American teenager as described in the claim above?

Task Five: Exploring further

11. Can you find evidence that boys sleep less or more than girls from your CensusAtSchool sample?

Extension
Task Six: Limitations

When making claims based on data, the claims are only as good as the data.

12. Think about the conclusions you have made throughout this piece of work. Do you think the data provided from question 12 is of the type that gives you a good deal of confidence in your investigations? Explain your thoughts.

13. Use your data analysis from question 2 to explain how you convert time represented as a decimal (e.g. 9.9 hours) into time showing hours and minutes. Your explanation will need to show all of your working.